

## SEQUENCE LISTING

## <110> Gish, Kurt C.

## RECEIVED

JUN 1 1 2001

TECH CENTER 1600/2900

Mack, David

<120> NOVEL METHODS OF DIAGNOSING BREAST CANCER, COMPOSITIONS, AND METHODS OF SCREENING FOR BREAST CANCER MODULATORS

<130> A-69026/DJB/JJD

<140> US 09/702,216

<141> 2000-10-30

<150> US 09/525,361

<151> 2000-03-15

<150> US 09/453,137

<151> 1999-12-02

<150> US 09/450,810

<151> 1999-11-29

<150> PCT/US 00/06952

<151> 2000-03-15

<160> 3

<170> PatentIn Ver. 2.1

<210> 1

<211> 10315

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (10118)..(10180)

<223> "n" at positions 10118 and 10180 can be any base.

<400> 1

ttcctccgcg aaggctcctt tgatattaat agtgttggtg tcttgaaact gacgtaatgc 60 gcggagactg aggtcctgac aagcgataac atttctgata aagacccgat cttactgcaa 120 tetetagegt cetettttt ggtgetgetg gttteteeag acetegegte etetegattg 180 ctctctcgcc ttcctatttc tttttttt ttttaaacaa aaaacaacac ccctcccct 240 ctcccacccg gcaccgggca catccttgct ctatttcctt tctctttctc tctctctct 300 tctctttttt aataagggtg ggggagggaa aggggggga ggcaggaaag acctttttct 360 ctccccccg caataatcca agatcaactc tgcaaacaac agaagacggt tcatggcttt 420



ggccgccgcg ccaccatctt tcgggctgcc gagggtgttc ttgacgatta atcaacagat 480 gtacagatca gctctcaaaa tgtcttctgt gtcttctgag cgtcttctaa gacaattgca 540 ttagcctcct gctagttgac taatagaatt aataattgta aaaagcactc taaagccaca 600 tgccttatga agtcaatgct gggtatgatt ttacaaatat ggtccggaaa aagaaccccc 660 ctctgagaaa cgttgcaagt gaaggcgagg gccagatect ggagcctata ggtacagaaa 720 gcaaggtatc tggaaagaac aaagaattct ctgcagatca gatgtcagaa aatacggatc 780 agagtgatgc tgcagaacta aatcataagg aggaacatag cttgcatgtt caagatccat 840 cttctagcag taagaaggac ttgaaaagcg cagttctgag tgagaaggct ggcttcaatt 900 atgaaagccc cagtaaggga ggaaactttc cctcctttcc gcatgatgag gtgacagaca 960 gaaatatgtt ggctttctca tttccagctg ctgggggagt ctgtgagccc ttgaagtctc 1020 cgcaaagagc agaggcagat gaccctcaag atatggcctg caccccctca ggggactcac 1080 tggagacaaa ggaagatcag aagatgtcac caaaggctac agaggaaaca gggcaagcac 1140 agagtggtca agccaattgt caaggtttga gcccagtttc agtggcctca aaaaacccac 1200 aagtgeette agatgggggt gtaagaetga ataaateeaa aactgaetta etggtgaatg 1260 acaacccaga cccggcacct ctgtctccag agcttcagga ctttaaatgc aatatctgtg 1320 gatatggtta ctacggcaac gaccccacag atctgattaa gcacttccga aagtatcact 1380 taggactgca taaccgcacc aggcaagatg ctgagctgga cagcaaaatc ttggcccttc 1440 ataacatggt gcagttcagc cattccaaag acttccagaa ggtcaaccgt tctgtgtttt 1500 ctggtgtgct gcaggacatc aattetteaa ggcctgtttt actaaatggg acctatgatg 1560 tgcaggtgac ttcaggtgga acattcattg gcattggacg gaaaacacca gattgccaag 1620 ggaacaccaa gtatttccgc tgtaaattct gcaatttcac ttatatgggc aactcatcca 1680 ccgaattaga acaacatttt cttcagactc acccaaacaa aataaaagct tctctcccct 1740 cctctgaggt tgcaaaacct tcagagaaaa actctaacaa gtccatccct gcacttcaat 1800 ccagtgattc tggagacttg ggaaaatggc aggacaagat aacagtcaaa gcaggagatg 1860 acacteetgt tgggtaetea gtgeeeataa ageeeetega tteetetaga caaaatggta 1920 cagaggccac cagttactac tggtgtaaat tttgtagttt cagctgtgag tcatctagct 1980 cacttaaact gctagaacat tatggcaagc agcacggagc agtgcagtca ggcggcctta 2040 atccagagtt aaatgataag ctttccaggg gctctgtcat taatcagaat gatctagcca 2100 aaagttcaga aggagagaca atgaccaaga cagacaagag ctcgagtggg gctaaaaaga 2160 aggacttete cageaaggga geegaggata atatggtaae gagetataat tgteagttet 2220 gtgacttccg atattccaaa agccatggcc ctgatgtaat tgtagtgggg ccacttctcc 2280 gtcattatca acagetecat aacatteaca agtgtaecat taaacaetgt ceattetgte 2340 ccagaggact ttgcagccca gaaaagcacc ttggagaaat tacttatccg tttgcttgta 2400 gaaaaagtaa ttgttcccac tgtgcactct tgcttctgca cttgtctcct ggggcggctg 2460 gaagctcgcg agtcaaacat cagtgccatc agtgttcatt caccacccct gacgtagatg 2520 tactcctctt tcactatgaa agtgtgcatg agtcccaagc atcggatgtc aaacaagaag 2580 caaatcacct gcaaggateg gatgggeage agtetgteaa ggaaageaaa gaacacteat 2640 gtaccaaatg tgattttatt acccaagtgg aagaagagat ttcccgacac tacaggagag 2700 cacacagetg etacaaatge egteagtgea gttttaeage tgeegataet eagteactae 2760 tggagcactt caacactgtt cactgccagg aacaggacat cactacagcc aacggcgaag 2820 aggacggtca tgccatatcc accatcaaag aggagcccaa aattgacttc agggtctaca 2880 atctgctaac tccagactct aaaatgggag agccagtttc tgagagtgtg gtgaagagag 2940 agaagctgga agagaaggac gggctcaaag agaaagtttg gaccgagagt tccagtgatg 3000 accttegeaa tgtgaettgg agaggggeag acateetgeg ggggagteeg teatacacee 3060 aagcaageet ggggetgetg aegeetgtgt etggeaeeca agagcagaea aagaetetaa 3120 gggatagtcc caatgtggag gccgcccatc tggcgcgacc tatttatggc ttggctgtgg 3180 aaaccaaggg attootgoag ggggcgcoag ctggcggaga gaagtotggg gccctccccc 3240 agcagtatee tgeateggga gaaaacaagt eeaaggatga ateccagtee etgttaegga 3300

Cont cont

ggcgtagagg ctccggtgtt ttttgtgcca attgcctgac cacaaagacc tctctctggc 3360 gaaagaatgc aaatggcgga tatgtatgca acgcgtgtgg cctctaccag aagcttcact 3420 cgactcccag gcctttaaac atcattaaac aaaacaacgg tgagcagatt attaggagga 3480 gaacaagaaa gcgccttaac ccagaggcac ttcaggctga gcagctcaac aaacagcaga 3540 ggggcagcaa tgaggagcaa gtcaatggaa gcccgttaga gaggaggtca gaagatcatc 3600 taactgaaag tcaccagaga gaaattccac tccccagcct aagtaaatac gaagcccagg 3660 gttcattgac taaaagccat tctgctcagc agccagtcct ggtcagccaa actctggata 3720 ttcacaaaag gatgcaacct ttgcacattc agataaaaag tcctcaggaa agtactggag 3780 atccaggaaa tagttcatcc gtatctgaag ggaaaggaag ttctgagaga ggcagtccta 3840 tagaaaagta catgagacct gcgaaacacc caaattattc accaccaggc agccctattg 3900 aaaagtacca gtacccactt tttggacttc cctttgtaca taatgacttc cagagtgaag 3960 ctgattggct gcggttctgg agtaaatata agctctccgt tcctgggaat ccgcactact 4020 tgagtcacgt gcctggccta ccaaatcctt gccaaaacta tgtgccttat cccaccttca 4080 atctgcctcc tcatttttca gctgttggat cagacaatga cattcctcta gatttggcga 4140 tcaagcattc cagacctggg ccaactgcaa acggtgcctc caaggagaaa acgaaggcac 4200 caccaaatgt aaaaaatgaa ggtcccttga atgtagtaaa aacagagaaa gttgatagaa 4260 gtactcaaga tgaactttca acaaaatgtg tgcactgtgg cattgtcttt ctggatgaag 4320 tgatgtatgc tttgcatatg agttgccatg gtgacagtgg acctttccag tgcagcatat 4380 gccagcatct ttgcacggac aaatatgact tcacaacaca tatccagagg ggcctgcata 4440 ggaacaatgc acaagtggaa aaaaatggaa aacctaaaga gtaaaacctt agcacttagc 4500 acaattaaat agaaataggt tttettgatg ggaatteaat agettgtaat gtettatgaa 4560 gacctattaa aaaaatactt catagagcct geettateea acatgaaatt eeettetttt 4620 gttattcttt cttttgatga gtaggttacc aagattaaaa agtgagataa atggtcaatg 4680 agaaagaatg gaagatggta aacaatcact ttttaaaacc tgttaagtca aaaccatctt 4740 ggctaatatg tactggggaa ataatccata agagatatca ccagactaga attaatatat 4800 ttataaagaa agagaccaaa actgtctaga atttgaaagg gtttacatat tattatacta 4860 aagcagtact ggactggcca ttggaccatt tgttccaaaa cccataaatt gttgcctaaa 4920 tttataatga tcatgaaacc ctaggcagag gaggagaaat tgaaggtcca gggcaatgaa 4980 agaaaaatgg cgccctctca atttagtctt ctctcattgg ccatgtttca gattttgacc 5040 tagaaatgcg agctgtggtt aggcttggtt agagtgcagc aagcaacatg acagatggtg 5100 gcacgctgtt tttacccage cetgeetgta catacacatg cacaccetet etgatatttt 5160 tgtcctttag atgttcaaat actcagtagt ccttttgttt gcggtttaga ttcattttgt 5220 ccacacatgt acccatttta aaaaacaatg teetegatge ttetgtagtg attteatttt 5280 agccaggtat ttctttcttg tgtgtgatga accagtatgg atttgctttt ctaagcctcc 5340 tgttggttac taatctcact tggcacatta taactaaagg aatccectca attcaaaagc 5400 atagatggat acaaatgtca gaccgtgggt ttaatttgtt tagaacacat ggcatttctt 5460 cacaaggtaa cctgctgtat ttatttattt tcttttggtt aaatataatt tccaaacttt 5520 gtggtcaggc agcgtctaag gttacgttac cacagactga cagttggtat atgtaccagc 5580 caatcccttc attaaatgta tacagattta gttaagtagc attaaatagg attcttagaa 5640 gtatgtcctc atagaacttt taatacttaa ggctttgtaa aaactatcca tgaagggaaa 5700 gctcctcagc ataactgctc agggaaatag ggctaaataa ctgaacatta aataattggt 5760 taaaggtgct gttagtcgag cctcaatgct tgctacaagg atgtatgtac aaggactgac 5820 tttaataatt tgcattatat tgtcccaacc agtagtttat tttttgccac ggagatgtag 5880 aagatattac aagctactgg atgcactgtc agattaactt atttcattaa agaagttggg 5940 agaacaaata ggaaaaaaaa aacttatttt tctagtaaat attaatgtat tacatttcaa 6000 ataatggtgc ctgacatatt gaataattat tttctacagt gtacgtatgc aacaaagata 6060 ttccatcatg cattagagtc agttctggct ctgcctagct gtttacattt gcaaatgtag 6120 caaacaaggt aatgaagcaa ctatttctat tgcagtagat atccttttgt gtgtgtgtgt 6180

as

gtgcattaaa gttgtaaacg gtaacatgaa acaaatgaaa gttcttgcta taatggtatg 6240 gaaaacaaga aggaaatgaa aatatttta tgcctactta ggaaaaaaag ggtagcactt 6300 attcattcca agtacttttt tttttttaat ttttaagctc ttaactcaca ttgttatgct 6360 taagatgata aacatatatc ctctttttat tgctttgtct atgtttcata tgaaacattt 6420 cagaaattat tttgataagt gttgctggaa tctgcaacgc tgatttttt ttgcattctg 6480 tagtcgcatt tgcactccat ttttacatta attcgcagtt gctttgtatc attgttttgt 6540 ttgggttttg tttcttttc acagtgccgg gtcttcgttt cttaaagttg gatggcaggt 6600 agagttcaac cagttcgtga ctgttgtagc gaatgaagtt aaaaaaatgt ctttctgatg 6660 ttgtgttgtc attttcattt ttgcattttt ttgtttgcat attaaaaaaa gagaaaagag 6720 aaagcaagag acagaaatca ggactaagtc ctctgcttca gtttcattgt taacgggcct 6780 tattctgatc tcacctgtcg cgtagctcta atattcacat aaactgaaat aaagaagtgg 6840 aatgaggagc tttgacattc aaattatgtg atgtaattta tcttccttag gaattttgat 6900 ggatgcatct caaaaatgtat agccagactt gagaggtgac aattaaagat ctaaaaaaga 6960 gaggagattc ccccaaacaa caatatttaa ttttcttagt aaaaagaata acagaatgca 7020 tegtggcaat cettaageaa cattatetat gtggaetget taaateagea aaacaceaga 7080 agtttggtta acttgggcaa tatgacaagt attacttttt gggcaaaact actcattaag 7140 caatttetet agtgtgtegg acacaaatag gttetttatt tttggeatgt atgeettttt 7200 attttcattc aattttttt ttttctcaga cagacatagt agtatcaact agcattggaa 7260 aatacatatc actattcttg gaatatttat ggtcagtcta ctttttagta aaatattttt 7320 cattttttgc tttcattatt atacatattt tggtggagaa gaggttgggc ttttttgaaa 7440 gagacaaaaa tttattataa cactaaacac teettttttg acatattaaa geetttatte 7500 catctctcaa gatatattat aaaatttatt tttttaattt aagatttctg aattatttta 7560 tcttaaattg tgattttaaa cgagctatta tggtacggaa cttttttaa tgaggaattt 7620 catgatgatt taggaatttt ctctcttgga aaaggcttcc cctgtgatga aaatgatgtg 7680 ccagctaaaa ttgtgtgcca tttaaaaact gaaaatattt taaaattat tgtctatatt 7740 ctaaattgag ctttggatca aactttaggc caggaccagc tcatgcgttc tcattcttcc 7800 ttttctcact ctttctctca tcactcacct ctgtattcat tctgttgttt gggatagaaa 7860 aatcataaag agccaaccca tctcagaacg ttgtggattg agagagacac tacatgactc 7920 caagtatatg agaaaaggac agagctctaa ttgataactc tgtagttcaa aaggaaaaga 7980 gtatgcccaa ttctctctac atgacatatt gagatttttt ttaatcaact tttaagatag 8040 tgatgttctg ttctaaactg ttctgtttta gtgaaggtag atttttataa aacaagcatg 8100 gggattettt tetaaggtaa tattaatgag aagggaaaaa agtatettta acagetettt 8160 gttgaageet gtggtageae attatgttta taattgeaca tgtgeacata atetattatg 8220 atccaatgca aatacagctc caaaaatatt aaatgtatat atattttaaa atgcctgagg 8280 aaatacattt ticttaataa actgaagagt ctcagtatgg ctattaaaat aattattagc 8340 ctcctgttgt gtggctgcaa aacatcacaa agtgaccggt cttgagacct gtgaactgct 8400 gccctgttta gtaaataaaa ttaatgcatt tctagagggg gaatatctgc catccagtgg 8460 tggaaatgtg gagtaaagaa gctggtggtc tgcttctgtg ctgtatgcca gccttttgcc 8520 ttaagttgag aggaggtcaa ctttagctac tgtctttggt ttgagagcca tggcaaaaaa 8580 aaaaaaagaa aaaaagatca agtcgtcttt ggtgagccag taaggtgaaa gcttgctgac 8640 tgtccaaggc acaagagaaa attgaggaat tgaaatgcaa cctgagtatc aaactaaata 8700 ttctaatcaa aggtaggtac tgttaggtgg aattctatca gcaggcaact gcaaatgaga 8760 agaagataga aggacgcccg tcgggacttt ggagggcatt gttattttcc caaagaaaga 8820 cggccaaggg cagaggcatg gattetttge agageaette ettttggttt tteagtaetg 8880 tttcatagac agtgggctca catgttcctg atagtgctgc agttgcttag aaagcatccc 8940 agttaattgc agtaattaga acttctggaa tatgctaggg cagaagtatg tcaagtatgt 9000 cacatgaaga aaatgtgaaa ttcaagagta atccacacgt gagaaactag acaatgtaca 9060

Conk

ttcatgtgtt ctcttgaaag gaaagggaga gctgtaagct tcactctgtc ctacaccgga 9120 gaaaagcagg aataacttta ccgtggaaat aatgtttagc ttttatcaga gaaaattgtc 9180 cttctagagc atagagtccc aaaactcaat tctggttttc ccctgttttt ttttttttt 9240 tttttcccaa catatgaact gcagcatatc actttttctt tttgtgcctc aggttcctca 9300 cctgtaaaaat tgaaaaatat atgtattaat aatattatta ataataataa tggtaatgta 9360 gtacttgttt gtaaagcact ttgagatcct tggttgaaag gcaccatagg agtgccaagt 9420 attattatgt ggccaagggg gttatttaaa ctgtcagttc ccaaaggcca ggaaaggttg 9480 gggtcatttt tcttaaagac gagctgtaaa tatcaactag gcagccaata gtgttgacta 9540 tgaagatgca aaactattac taggctgata aaatcatagt ttcttaatgg ctaccaataa 9600 ggcaaatatc acaataataa acgccaaatt ccttagggcg gactatttga caaccacatg 9660 gaaaactttg ggggaggcat gaggggggaa catctcaaaa tgccaatgta aaatttaact 9720 tacagcaata ttcaccagca gaaaatgtct ttcatatgga atgatttcat gttgctaaga 9780 aaaagaattc aatttgtagt cctgatttga atactagaat gttggctata atagttctgt 9840 tcttacaaca catgaaattt tttcgtttta ttttattttg ttttcatagt gcatgttcat 9900 ttctactcac aaacatgttc ttggtgtatt tcttatgcaa acaatcttca ggcagcaaag 9960 atgtctgtta catctaaact tgaataataa agttttacca ccagttacac ataacggcgt 10020 tggtatggtt tatatggatt cactttcatc cttctaggca atagggaaat acagatcatt 10080 gtaatatata tatatata tacaaggete tgetgaantg aaatggtgaa atcaaatcac 10140 cattctaaaa aattattact tatattgata aagcctggan tctctcaact tgttttgctt 10200 tgcttttttt ctttaaccaa tcaatctctt actgatagat tttgtgtaaa aagatatata 10260 ctagtttctt cagaaagatt aacaataaaa attgtgttta tttcaaaaaa aaaaa 10315

<210> 2

<211> 1281

<212> PRT

<213> Homo sapiens

<400> 2

Met Val Arg Lys Lys Asn Pro Pro Leu Arg Asn Val Ala Ser Glu Gly
1 5 10 15

Glu Gly Gln Ile Leu Glu Pro Ile Gly Thr Glu Ser Lys Val Ser Gly
20 25 30

Lys Asn Lys Glu Phe Ser Ala Asp Gln Met Ser Glu Asn Thr Asp Gln 35 40 45

Ser Asp Ala Ala Glu Leu Asn His Lys Glu Glu His Ser Leu His Val
50 55 60

Gln Asp Pro Ser Ser Ser Lys Lys Asp Leu Lys Ser Ala Val Leu
65 70 75 80

Ser Glu Lys Ala Gly Phe Asn Tyr Glu Ser Pro Ser Lys Gly Gly Asn 85 90 95

Phe Pro Ser Phe Pro His Asp Glu Val Thr Asp Arg Asn Met Leu Ala

Phe Ser Phe Pro Ala Ala Gly Gly Val Cys Glu Pro Leu Lys Ser Pro Gln Arg Ala Glu Ala Asp Asp Pro Gln Asp Met Ala Cys Thr Pro Ser Gly Asp Ser Leu Glu Thr Lys Glu Asp Gln Lys Met Ser Pro Lys Ala Thr Glu Glu Thr Gly Gln Ala Gln Ser Gly Gln Ala Asn Cys Gln Gly Leu Ser Pro Val Ser Val Ala Ser Lys Asn Pro Gln Val Pro Ser Asp Gly Gly Val Arg Leu Asn Lys Ser Lys Thr Asp Leu Leu Val Asn Asp Asn Pro Asp Pro Ala Pro Leu Ser Pro Glu Leu Gln Asp Phe Lys Cys Asn Ile Cys Gly Tyr Gly Tyr Tyr Gly Asn Asp Pro Thr Asp Leu Ile Lys His Phe Arg Lys Tyr His Leu Gly Leu His Asn Arg Thr Arg Gln Asp Ala Glu Leu Asp Ser Lys Ile Leu Ala Leu His Asn Met Val Gln Phe Ser His Ser Lys Asp Phe Gln Lys Val Asn Arg Ser Val Phe Ser Gly Val Leu Gln Asp Ile Asn Ser Ser Arg Pro Val Leu Leu Asn Gly Thr Tyr Asp Val Gln Val Thr Ser Gly Gly Thr Phe Ile Gly Ile Gly Arg Lys Thr Pro Asp Cys Gln Gly Asn Thr Lys Tyr Phe Arg Cys Lys Phe Cys Asn Phe Thr Tyr Met Gly Asn Ser Ser Thr Glu Leu Glu Gln

His Phe Leu Gln Thr His Pro Asn Lys Ile Lys Ala Ser Leu Pro Ser

Ser Glu Val Ala Lys Pro Ser Glu Lys Asn Ser Asn Lys Ser Ile Pro Ala Leu Gln Ser Ser Asp Ser Gly Asp Leu Gly Lys Trp Gln Asp Lys Ile Thr Val Lys Ala Gly Asp Asp Thr Pro Val Gly Tyr Ser Val Pro Ile Lys Pro Leu Asp Ser Ser Arg Gln Asn Gly Thr Glu Ala Thr Ser Tyr Tyr Trp Cys Lys Phe Cys Ser Phe Ser Cys Glu Ser Ser Ser Leu Lys Leu Leu Glu His Tyr Gly Lys Gln His Gly Ala Val Gln Ser Gly Gly Leu Asn Pro Glu Leu Asn Asp Lys Leu Ser Arg Gly Ser Val Ile Asn Gln Asn Asp Leu Ala Lys Ser Ser Glu Gly Glu Thr Met Thr Lys Thr Asp Lys Ser Ser Ser Gly Ala Lys Lys Asp Phe Ser Ser Lys Gly Ala Glu Asp Asn Met Val Thr Ser Tyr Asn Cys Gln Phe Cys Asp Phe Arg Tyr Ser Lys Ser His Gly Pro Asp Val Ile Val Val Gly Pro Leu Leu Arg His Tyr Gln Gln Leu His Asn Ile His Lys Cys Thr Ile Lys His Cys Pro Phe Cys Pro Arg Gly Leu Cys Ser Pro Glu Lys His Leu Gly Glu Ile Thr Tyr Pro Phe Ala Cys Arg Lys Ser Asn Cys Ser His Cys Ala Leu Leu Leu His Leu Ser Pro Gly Ala Ala Gly Ser Ser Arg Val Lys His Gln Cys His Gln Cys Ser Phe Thr Thr Pro

Asp Val Asp Val Leu Leu Phe His Tyr Glu Ser Val His Glu Ser Gln Ala Ser Asp Val Lys Gln Glu Ala Asn His Leu Gln Gly Ser Asp Gly Gln Gln Ser Val Lys Glu Ser Lys Glu His Ser Cys Thr Lys Cys Asp Phe Ile Thr Gln Val Glu Glu Glu Ile Ser Arg His Tyr Arg Arg Ala His Ser Cys Tyr Lys Cys Arg Gln Cys Ser Phe Thr Ala Ala Asp Thr Gln Ser Leu Leu Glu His Phe Asn Thr Val His Cys Gln Glu Gln Asp Ile Thr Thr Ala Asn Gly Glu Glu Asp Gly His Ala Ile Ser Thr Ile Lys Glu Glu Pro Lys Ile Asp Phe Arg Val Tyr Asn Leu Leu Thr Pro Asp Ser Lys Met Gly Glu Pro Val Ser Glu Ser Val Val Lys Arg Glu Lys Leu Glu Glu Lys Asp Gly Leu Lys Glu Lys Val Trp Thr Glu Ser Ser Ser Asp Asp Leu Arg Asn Val Thr Trp Arg Gly Ala Asp Ile Leu Arg Gly Ser Pro Ser Tyr Thr Gln Ala Ser Leu Gly Leu Leu Thr Pro Val Ser Gly Thr Gln Glu Gln Thr Lys Thr Leu Arg Asp Ser Pro Asn Val Glu Ala Ala His Leu Ala Arg Pro Ile Tyr Gly Leu Ala Val Glu Thr Lys Gly Phe Leu Gln Gly Ala Pro Ala Gly Gly Glu Lys Ser Gly 

Ala Leu Pro Gln Gln Tyr Pro Ala Ser Gly Glu Asn Lys Ser Lys Asp

865 870 875

Glu Ser Gln Ser Leu Leu Arg Arg Arg Gly Ser Gly Val Phe Cys 885 890 895

Ala Asn Cys Leu Thr Thr Lys Thr Ser Leu Trp Arg Lys Asn Ala Asn 900 905 910

Gly Gly Tyr Val Cys Asn Ala Cys Gly Leu Tyr Gln Lys Leu His Ser 915 920 925

Thr Pro Arg Pro Leu Asn Ile Ile Lys Gin Asn Asn Gly Glu Gln Ile 930 935 940

Ile Arg Arg Arg Thr Arg Lys Arg Leu Asn Pro Glu Ala Leu Gln Ala 945 . 950 955 960

Glu Gln Leu Asn Lys Gln Gln Arg Gly Ser Asn Glu Glu Gln Val Asn 965 970 975

Gly Ser Pro Leu Glu Arg Arg Ser Glu Asp His Leu Thr Glu Ser His 980 985 990

Gln Arg Glu Ile Pro Leu Pro Ser Leu Ser Lys Tyr Glu Ala Gln Gly 995 1000 1005

Ser Leu Thr Lys Ser His Ser Ala Gln Gln Pro Val Leu Val Ser Gln 1010 1015 1020

Thr Leu Asp Ile His Lys Arg Met Gln Pro Leu His Ile Gln Ile Lys 1025 1030 1035 1040

Ser Pro Gln Glu Ser Thr Gly Asp Pro Gly Asn Ser Ser Ser Val Ser 1045 1050 . 1055

Glu Gly Lys Gly Ser Ser Glu Arg Gly Ser Pro Ile Glu Lys Tyr Met
1060 1065 1070

Arg Pro Ala Lys His Pro Asn Tyr Ser Pro Pro Gly Ser Pro Ile Glu 1075 1080 1085

Lys Tyr Gln Tyr Pro Leu Phe Gly Leu Pro Phe Val His Asn Asp Phe 1090 1095 1100

Gln Ser Glu Ala Asp Trp Leu Arg Phe Trp Ser Lys Tyr Lys Leu Ser 1105 1110 1115 1120

Val Pro Gly Asn Pro His Tyr Leu Ser His Val Pro Gly Leu Pro Asn

Pro Cys Gln Asn Tyr Val Pro Tyr Pro Thr Phe Asn Leu Pro Pro His 1140 1145 1150

Phe Ser Ala Val Gly Ser Asp Asn Asp Ile Pro Leu Asp Leu Ala Ile 1155 1160 1165

Lys His Ser Arg Pro Gly Pro Thr Ala Asn Gly Ala Ser Lys Glu Lys 1170 1180

Thr Lys Ala Pro Pro Asn Val Lys Asn Glu Gly Pro Leu Asn Val Val 1185 1190 1195 1200

Lys Thr Glu Lys Val Asp Arg Ser Thr Gln Asp Glu Leu Ser Thr Lys 1205 1210 1215

Cys Val His Cys Gly Ile Val Phe Leu Asp Glu Val Met Tyr Ala Leu 1220 1225 1230

His Met Ser Cys His Gly Asp Ser Gly Pro Phe Gln Cys Ser Ile Cys 1235 1240 1245

Gln His Leu Cys Thr Asp Lys Tyr Asp Phe Thr Thr His Ile Gln Arg 1250 1255 1260

Gly Leu His Arg Asn Asn Ala Gln Val Glu Lys Asn Gly Lys Pro Lys 1265 1270 1275 1280

Glu

<210> 3

<211> 5

<212> PRT

<213> Unknown Organism

<220>

<221> UNSURE

<222> (3)

<223> "Xaa" at position 3 can be any base

<220>

<223> Description of Unknown Organism: cytokine
receptor extracellular motif found in many species

<400> 3

Trp Ser Xaa Trp Ser